

## E3.02 FILLING AND DRAINING THE SYSTEM



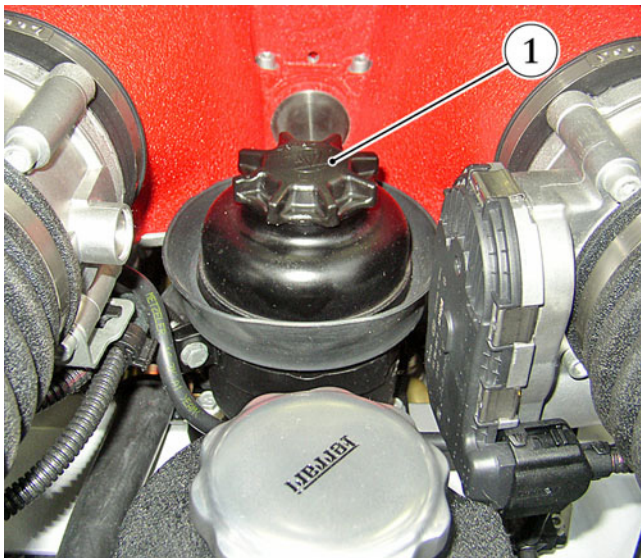
After having emptied the hydraulic circuit during periodic maintenance, or in case of replacement of a component or of a pipe, only use quality oil and in the prescribed quantity to fill the system (👉 [A 1.02](#)).

The system self-drains but, to facilitate this function, carry out the following procedure.

- With the engine at rest and the system filled with oil at the maximum level, make five full steering-wheel turns. During this procedure it is necessary to avoid emptying of the tank.
- Check the oil level in the tank and refill it if necessary (👉 [A 3.16](#)).
- Start the engine for about five seconds.
- When the engine stops, check the level.
- With the engine at rest, make another five or more full steering-wheel turns.
- When the engine stops, check the level again and the status of the oil; excessive emulsified air prevents effective self-draining.

If this occurs, leave the engine at rest for a few minutes, to allow the oil to settle.

- Restart the engine and, if this situation persists and the pump seems loud, the liquid in the tank must be replaced with new oil.
- At the end of the procedure the oil in the tank must be at the maximum level (👉 [A 3.16](#)).
- Carefully close the tank cap (1).



## F1.01 TECHNICAL FEATURES



### Suspension systems

- All-around independent suspension systems, with swinging upper and lower transverse triangular arms.
- Double-acting telescopic hydro-pneumatic shock absorbers, with continuous variation of the electronically-controlled setting.
- Low kingpin offset to improve braking stability and minimise kick-back on the steering wheel.
- Anti-dive configuration owing to the lower arm being tilted to reduce front pitching when braking.
- A maintenance-free, one-piece double-row ball bearing is fitted on the wheel hub.
- Transverse stabilizer bars.

### Wheels

Light alloy wheel rims.

*Wheel rim dimensions:*

- front: **7,5" J x 19"**

- rear: **10" J x 19"**

"Tubeless" type unidirectional **tyres**.

*Tyre dimensions:*

- front: **225/35 ZR19"**

- rear: **285/35 ZR19"**

*Type of tyres:*

- **PIRELLI P Zero Rosso**

- **BRIDGESTONE Potenza RE050A**

- **MICHELIN Pilot Sport 2**

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*Snow tires:*

- **PIRELLI Winter Sottozero** (max. speed 210 km/h)

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*Optional tires (Run flat):*

- **GOODYEAR Regol F1 GS-D3 EMT**

### Spare tire

- rim **3,5" J x 19"**

- tyre: **PIRELLI T 115/70 R19"** (max. speed 80 km/h)

### Tyre pressure

<i>Types of tyres</i>	<b>PIRELLI P Zero Rosso</b>	<b>BRIDGESTONE Potenza RE050A</b>	<b>MICHELIN Pilot Sport 2</b>	<b>GOODYEAR Eagle F1 GS-D3 EMT</b>	<b>Spare tire</b>
- front:	<b>2,2 bar</b>	<b>2,3 bar</b>	<b>2,2 bar</b>	<b>2,5 bar</b>	<b>4,2 bar</b>
- rear:	<b>2,2 bar</b>	<b>2,5 bar</b>	<b>2,4 bar</b>	<b>2,5 bar</b>	

## F1.02 TIGHTENING TORQUES



### NOTES

To check the tolerances in relation to the tightening class (👉 02.05).

Description	Torque (Nm)	Class	Product
Screw fastening tie-rod to hub-holder and stub axle	65	A	TUTELA Z2 Grease
Ball joint tie-rod for stabiliser bar	50	B	
Nut fastening upper lever to chassis	25	A	
Screw fastening upper lever to stub axle and hub carrier	65	A	TUTELA Z2 Grease
Screw fastening lower lever to stub axle and hub carrier	85	A	TUTELA Z2 Grease
Nut fastening lower front lever to chassis	60	A	
Nut fastening lower rear lever to chassis	60	A	
Screw fastening shock absorber to lower lever	80	A	Molykote U-N Paste
Fastening lock nut Joint on steering and toe-in tie-rod	60	A	
Screw fastening rear tie-rod to chassis	25	B	
Upper shock absorber fastening screw	50	A	
Shock absorber ring nut	65	B	
Shock absorber head	60	A	OMNIFIT 230 M thread locking product
Screw fastening front bar mount	25	B	
Screw fastening arm to rear bar	35	B	
Ball joint tie-rod with bar	50	B	
Central nut pin	275	B	TUTELA Z2 Grease
Bearing fastening screw	65÷75	A	
Screw fastening bearing's retaining bracket	5,2÷6,7	B	
Screw fastening cover to front stub axle	9÷10	C	
Nut fastening axle shaft to wheel bearing	275	B	TUTELA Z2 Grease
Stud bolt pre-tightening	25÷45		
Stud bolt final tightening	100	B	
Spare wheel stud bolts: final tightening	98	B	
Nut fastening valve to rim	10	B	
Screw fastening axle shaft (preload 40 Nm)	78 Nm	A	Grease MOLYKOTE 1000

### F1.03 SPECIFIC TOOLING/EQUIPMENT



<b>Code</b>	<b>Tool no.</b>	<b>Description</b>
<b>95973206</b>	<b>AV 3206</b>	Support for complete hub
<b>95973304</b>	<b>AV 3304</b>	Tool for removing/fitting the shock-absorber punch
<b>95973189</b>	<b>AV 3189</b>	Tool for disassembling/assembling the upper flexible bushing on the shock-absorber
<b>95973217</b>	<b>AV 3217</b>	Tool for disassembling/assembling the lower joint on the shock-absorber
<b>95973281</b>	<b>AV 3281</b>	Tool for removing/fitting the flamblock on the lower arm
<b>95973282</b>	<b>AV 3282</b>	Tool for removing/fitting the flamblock on the upper arm
	<b>AS 10723-07</b>	Upper lever resting pad for ball joint removal
	<b>AV 3427-14</b>	Lower lever resting pad for ball joint removal
<b>95971651</b>	<b>AV 1651</b>	Punch for lower lever ball joint removal

## F2.01 HUB-HOLDER STUB AXLE

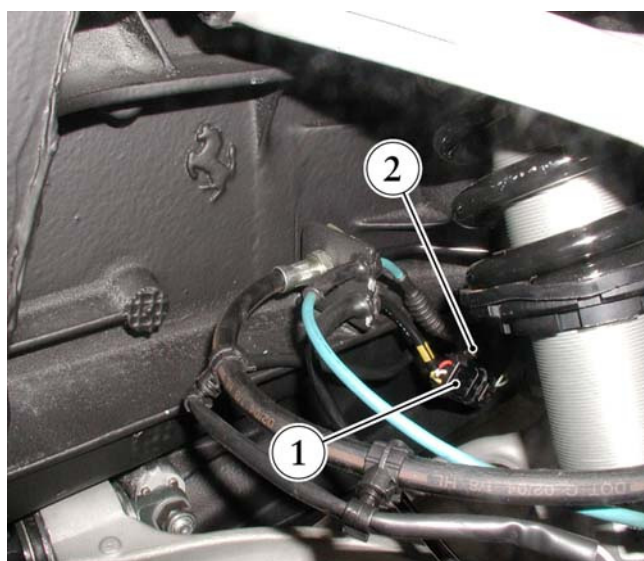


Tightening torques	Nm	Category	Product
Screw fastening the upper lever to the stub axle and the hub carrier	65	A	TUTELA Z2 Grease
Screw fastening the lower lever to the stub axle and the hub carrier	85	A	TUTELA Z2 Grease
Hub-holder and stub axle tie-rod fastening screw	65	A	TUTELA Z2 Grease
Stub axle service caliper fastening screw (M12)	85	B	
Hub carrier service caliper fastening screw (M10)	70	B	
Wheel centring pin	15	C	
Brake disc fastening screw	15	C	
Parking brake caliper fastening screw (M10)	70	B	
Parking brake caliper fastening screw (M8)	30	B	
Central pin nut	275	B	TUTELA Z2 Grease
Check-nut fastening the joint on the steering and toe-in tie-rod	60	A	
Screw fastening wiring support bracket	9÷10	C	

Both components consist of a cast light alloy with housing for the wheel support bearing and the seats for the ball joints of the suspension arms and tie-rods for the steering box (stub axle) or the toe-in adjustment. With each overhaul, ensure that the cast alloy is free of cracks or dents and that the threads are in good condition.

### Removing the stub axle

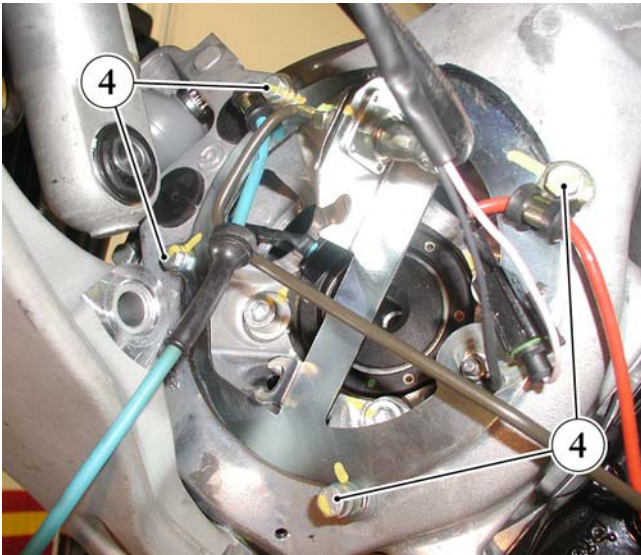
- Remove the front wheel (👉 F 3.06).
- Disconnect the electric connection on the wheel sensor (1), and the ABS sensor (2) and release the cable guides.



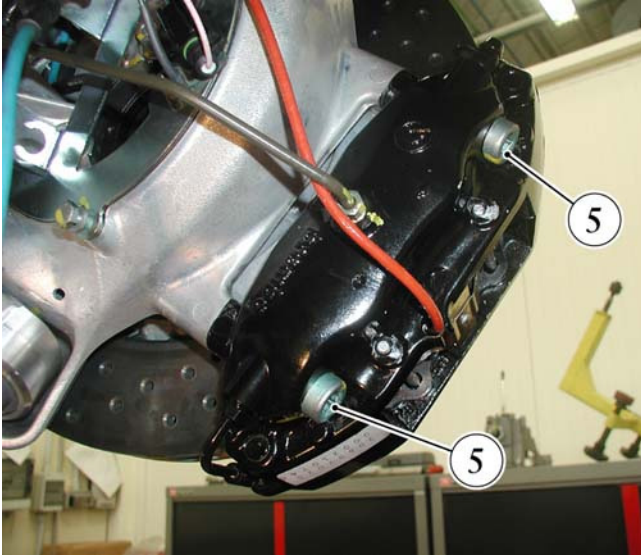
- Free the cable guides (3).



- Undo the four fastening screws (4) of the wiring support bracket.



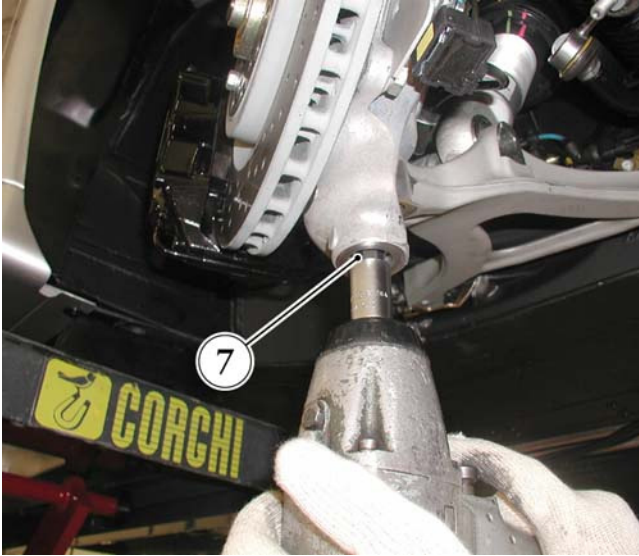
- Undo the two brake caliper fastening screws **(5)**.



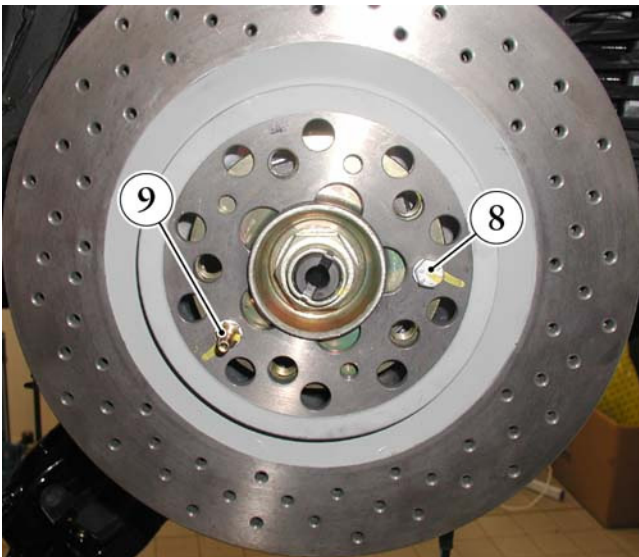
- Suitably engage the caliper **(6)** outside the working area, being extremely careful not to damage it and the surrounding parts.



- Undo the lower stub axle fastening screw (7).

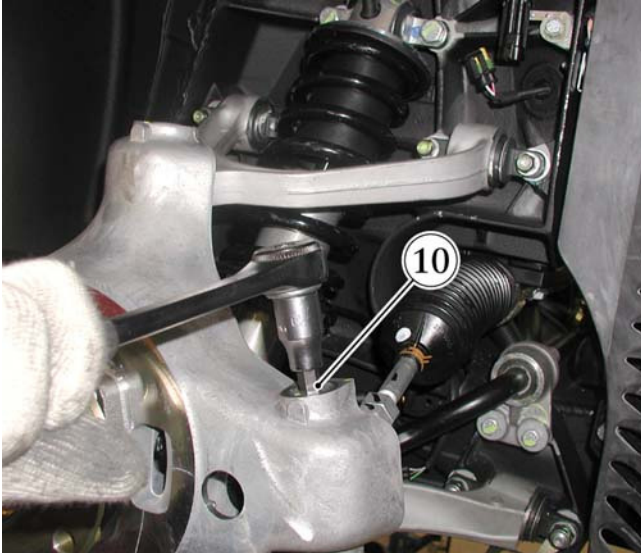


- Undo the fastening screw (8) and the wheel centring pin (9) of the brake disc and remove it.

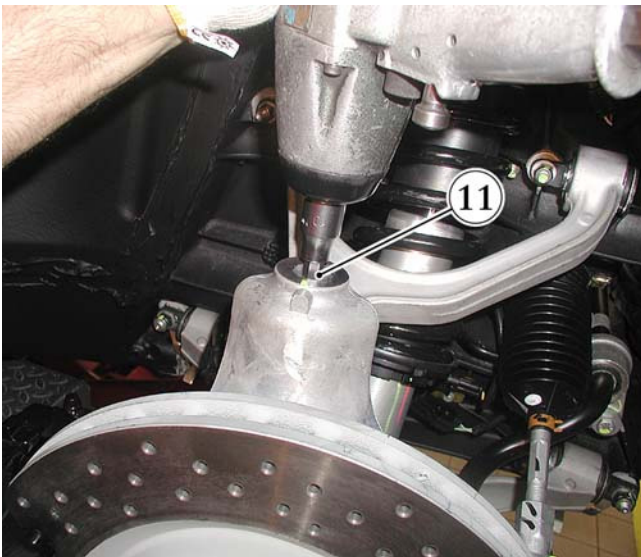




- Undo the screw **(10)** fastening the stub axle to the steering box tie-rod.



- Undo the upper stub axle fastening screw **(11)** and remove it.



#### *Reassembly notes*

- Tighten the screws **(5)**, **(7)**, **(8)**, **(9)**, **(10)** and **(11)** to the specified torque.
- Refit the parts removed for the procedure.